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08/958,088	10/27/1997	JOHN S. HENDRICKS	5062	2949

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EXAMINER	
KOENIG, ANDREW Y	

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 10/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	08/958,088	HENDRICKS ET AL.	
	Examiner	Art Unit	
	Andrew Y. Koenig	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *31,47-49 and 67-79* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *31* is/are allowed.

6)☒ Claim(s) *47-49 and 67-79* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 47-49 and 67-79 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claims 47-49 are objected to because of the following informalities:

Claim 47 recites the limitation "the controller CPU" in line 25. There is insufficient antecedent basis for this limitation in the claim. "The controller CPU" will be interpreted as "the control CPU"

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 47, 48, 67-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,400,401 to Wasilewski et al. (Wasilewski) in view of U.S. Patent 5,231,494 to Wachob, U.S. Patent 5,251,028 to Iu, and U.S. Patent 5,357,276 to Banker et al. (Banker).

Regarding claim 47, Wasilewski teaches a control microprocessor and VCM interpreter (fig. 16, label 338, 348) which manages, monitors, ensured that the desired programs are selected and send instructions (col. 20, ll. 27-32, col. 21, ll. 18-36). Wasilewski teaches a service extract/demux (fig. 16, label 344), which receives signals, and performs selections according the CPU instructions and outputs the selected programs (col. 21, ll. 36-57). Wasilewski teaches a multiplexer, which equates to a combiner accepting the selected programs and providing a combined signal for transmission according to instructions sent from the CPU to the service demultiplexer to combine the signals (col. 22, ll. 24-27). Further, Wasilewski teaches the CPU managing and monitoring the demultiplexer and combiner by sending data to the system.

Wasilewski teaches controlling a multiplexer, but Wasilewski is silent on the combiner comprising a plurality of first-in first-out (FIFO) storage means for storing packets from a single digital program and outputting the packets to an association output means, a plurality of output means connected to a serializing means.

In analogous art, Wachob teaches run length encoders coupled to FIFO buffers (132), which are for each of the separate television signals and the FIFO is connected to a multiplexer (col. 8, ll. 39-52, fig. 3, labels 132 and 136), which reads on a plurality of first-in first-out (FIFO) storage mean, each FIFO storage means storing packets from a single digital program and outputting the packets to an associated output means. Further, Wachob teaches a plurality of FIFO buffers (fig. 3, label 132, col. 8, ll. 39-52) connected to a serializing means (channel multiplexer, fig. 3, label 136).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wasilewski by implementing a plurality of first-in first-out (FIFO) storage means for storing packets from a single digital program and outputting the packets to an association output means, a plurality of output means connected to a serializing means as taught by Wachob in order to efficiently compress the program signals and provide a plurality of channels on a distinct physical channel, thereby enabling a plurality of programs to be sent on a single physical channel and efficiently using the bandwidth of the channel.

As discussed above, Wasilewski and Wachob teach a FIFO for each channel, wherein a plurality of channels are inserted into the channel multiplexer, but Wasilewski and Wachob are silent on a FIFO control means for monitoring the number of video packets input to and output from the FIFO storages, sending a control signal to a computer processing means when an individual FIFO storage means is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means.

Iu teaches a FIFO queue (34) and a buffer control (38), wherein the buffer control monitors the number of packets input and output from the FIFO storage and sends a control signal to the quantizer (30) when a FIFO is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means (fig. 1, label 34 and 38, col. 4, ll. 53-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the plurality of FIFOs of Wasilewski and Wachob

by implementing a FIFO control means for monitoring the number of video packets input to and output from the FIFO storages, sending a control signal to a computer processing means when an individual FIFO storage means is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means as taught by Iu in order to dynamically changing the resolution quality of the video by monitoring the data rate at the buffers, while ensuring that the signal is output at a constant rate, thereby reducing buffer-overflows and under-runs at the receiver device thus ensuring that the receiving device is capable of displaying the images at the best quality.

Wasilewski, Wachob, and Iu are silent on a network controller for controlling the operations of the control CPU and the set top terminals: a receiver, for obtaining communications from set top terminals; and a network controller CPU, connected to the receiver, for generating instructions to the controller CPU using the communications from the set top terminals.

In analogous art, Banker teaches network controller for controlling the operations of the control CPU and the set top terminals (col. 3, ll. 40-45, system manager fig. 1, label 12): a receiver, for obtaining communications from set top terminals (col. 4, ll. 40-57, IPPV processor, fig. 1, label 14); and a network controller CPU, connected to the receiver, for generating instructions to the controller CPU using the communications from the set top terminals (system manager, col. 3, ll. 40-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wasilewski, Wachob, and Iu by incorporating a

network controller for controlling the operations of the control CPU and the set top terminals: a receiver, for obtaining communications from set top terminals; and a network controller CPU, connected to the receiver, for generating instructions to the controller CPU using the communications from the set top terminals as taught by Banker in order to enable the headend to receive request and process additional services to users.

Wasilewski teaches a means for transferring instructions to the control CPU to be used for the selected programs (see signal line label 346 for the control microprocessor 338 of figure 16, col. 20, ll. 36-42, col. 21, ll. 11-12).

Regarding claim 48, Wasilewski teaches the demultiplexer separating the multiplexed signals into individual programs (col. 22, ll. 13-23).

Regarding claim 67, Wasilewski teaches processing a plurality of multiplexed signals at a signal processor, in that Wasilewski teaches a control microprocessor and VCM interpreter (fig. 16, label 338, 348) which manages, monitors, ensured that the desired programs are selected and send instructions (col. 20, ll. 27-32, col. 21, ll. 18-36). Wasilewski teaches receiving information and one or more multiplexed signals containing a plurality of programs, wherein the information includes data on identities of desired digital programs (col. 21, ll. 18-36, see also figure 17, col. 22, ll. 14-24). Wasilewski teaches generating instructions regarding the programs, wherein instructions are generated using the received information, in that the VCM interpreter identifies service IDs (col. 21, ll. 18-36), wherein the service Wasilewski teaches the

extracting and demultiplexing which selects the programs using the instructions, wherein the selected channel is a subset of the plurality of programs (fig. 16, label 344, col. 22, ll. 13-23). As shown in figure 17, Wasilewski teaches a multiplexer, which equates to a combiner accepting the selected programs and providing a combined signal for transmission according to instructions sent from the CPU to the service demultiplexer to combine the signals for transmission to set top terminals (col. 22, ll. 24-27).

Wasilewski teaches controlling a multiplexer, but Wasilewski is silent on the combiner comprising a plurality of first-in first-out (FIFO) storage means for storing packets from a single digital program and outputting the packets to an association output means, a plurality of output means connected to a serializing means.

In analogous art, Wachob teaches run length encoders coupled to FIFO buffers (132), which are for each of the separate television signals and the FIFO is connected to a multiplexer (col. 8, ll. 39-52, fig. 3, labels 132 and 136), which reads on a plurality of first-in first-out (FIFO) storage mean, each FIFO storage means storing packets from a single digital program and outputting the packets to an associated output means. Further, Wachob teaches a plurality of FIFO buffers (fig. 3, label 132, col. 8, ll. 39-52) connected to a serializing means (channel multiplexer, fig. 3, label 136).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wasilewski by implementing a plurality of first-in first-out (FIFO) storage means for storing packets from a single digital program and outputting the packets to an association output means, a plurality of output means

connected to a serializing means as taught by Wachob in order to efficiently compress the program signals and provide a plurality of channels on a distinct physical channel, thereby enabling a plurality of programs to be sent on a single physical channel and efficiently using the bandwidth of the channel.

As discussed above, Wasilewski and Wachob teach a FIFO for each channel, wherein a plurality of channels are inserted into the channel multiplexer, but Wasilewski and Wachob are silent on a FIFO control means for monitoring the number of video packets input to and output from the FIFO storages, sending a control signal to a computer processing means when an individual FIFO storage means is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means.

Iu teaches a FIFO queue (34) and a buffer control (38), wherein the buffer control monitors the number of packets input and output from the FIFO storage and sends a control signal to the quantizer (30) when a FIFO is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means (fig. 1, label 34 and 38, col. 4, ll. 53-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the plurality of FIFOs of Wasilewski and Wachob by implementing a FIFO control means for monitoring the number of video packets input to and output from the FIFO storages, sending a control signal to a computer processing means when an individual FIFO storage means is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the

serializing means as taught by Iu in order to dynamically changing the resolution quality of the video by monitoring the data rate at the buffers, while ensuring that the signal is output at a constant rate, thereby reducing buffer-overflows and under-runs at the receiver device thus ensuring that the receiving device is capable of displaying the images at the best quality.

Wasilewski is silent on controlling the operation of the signal processor and the set top terminals comprising: obtaining communications from the set top terminals, obtaining communications from the set top terminals; generating instructions to the signal processor using the information from the set top terminals.

In analogous art, Banker teaches controlling the operation of the signal processor and the set top terminals (col. 3, ll. 40-45, system manager fig. 1, label 12) comprising: obtaining communications from the set top terminals (col. 4, ll. 40-57, IPPV processor, fig. 1, label 14); generating instructions to the signal processor using the information from the set top terminals system manager, (col. 3, ll. 40-45);

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wasilewski, Wachob, and Iu by controlling the operation of the signal processor and the set top terminals comprising: obtaining communications from the set top terminals, obtaining communications from the set top terminals; generating instructions to the signal processor using the information from the set top terminals; transferring instructions to the signal processor to be used for selecting digital programs as taught by Banker in order to enable the headend to receive request and process additional services to users.

Wasilewski teaches transferring instructions to the signal processor to be used for selecting digital programs (see signal line label 346 for the control microprocessor 338 of figure 16, col. 20, ll. 36-42, col. 21, ll. 11-12). Wasilewski teaches distributing the combined signal to the set top terminals (fig. 17, label 412).

Regarding claim 68, Wasilewski teaches the demultiplexer separating the multiplexed signals into individual programs (col. 22, ll. 13-23).

Regarding claim 69, Wasilewski teaches a inserting one or more local programs and outputting the programs to the combiner, wherein the combiner outputs local programs with the selected programs (col. 22, ll. 27-30).

Regarding claim 70, Wasilewski teaches receiving information and one or more multiplexed signals containing a plurality of programs, wherein the information includes data on identities of desired digital programs (col. 21, ll. 18-36, see also figure 17, col. 22, ll. 14-24). Wasilewski teaches generating instructions regarding the programs, wherein instructions are generated using the received information, in that the VCM interpreter identifies service IDs (col. 21, ll. 18-36), wherein the service Wasilewski teaches the extracting and demultiplexing which selects the programs using the instructions, wherein the selected channel is a subset of the plurality of programs (fig. 16, label 344, col. 22, ll. 13-23), the examiner notes that by actively selecting programs, the system is removing unwanted programs. As shown in figure 17, Wasilewski teaches a multiplexer, which equates to a combiner accepting the selected programs

and providing a combined signal for transmission according to instructions sent from the CPU to the service demultiplexer to combine the signals (col. 22, ll. 24-27).

Wasilewski teaches controlling a multiplexer, but Wasilewski is silent on the combiner comprising a plurality of first-in first-out (FIFO) storage means for storing packets from a single digital program and outputting the packets to an association output means, a plurality of output means connected to a serializing means.

In analogous art, Wachob teaches run length encoders coupled to FIFO buffers (132), which are for each of the separate television signals and the FIFO is connected to a multiplexer (col. 8, ll. 39-52, fig. 3, labels 132 and 136), which reads on a plurality of first-in first-out (FIFO) storage mean, each FIFO storage means storing packets from a single digital program and outputting the packets to an associated output means. Further, Wachob teaches a plurality of FIFO buffers (fig. 3, label 132, col. 8, ll. 39-52) connected to a serializing means (channel multiplexer, fig. 3, label 136).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wasilewski by implementing a plurality of first-in first-out (FIFO) storage means for storing packets from a single digital program and outputting the packets to an association output means, a plurality of output means connected to a serializing means as taught by Wachob in order to efficiently compress the program signals and provide a plurality of channels on a distinct physical channel, thereby enabling a plurality of programs to be sent on a single physical channel and efficiently using the bandwidth of the channel.

As discussed above, Wasilewski and Wachob teach a FIFO for each channel, wherein a plurality of channels are inserted into the channel multiplexer, but Wasilewski and Wachob are silent on a FIFO control means for monitoring the number of video packets input to and output from the FIFO storages, sending a control signal to a computer processing means when an individual FIFO storage means is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means.

Iu teaches a FIFO queue (34) and a buffer control (38), wherein the buffer control monitors the number of packets input and output from the FIFO storage and sends a control signal to the quantizer (30) when a FIFO is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means (fig. 1, label 34 and 38, col. 4, ll. 53-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the plurality of FIFOs of Wasilewski and Wachob by implementing a FIFO control means for monitoring the number of video packets input to and output from the FIFO storages, sending a control signal to a computer processing means when an individual FIFO storage means is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means as taught by Iu in order to dynamically changing the resolution quality of the video by monitoring the data rate at the buffers, while ensuring that the signal is output at a constant rate, thereby reducing buffer-overflows and under-runs at the

receiver device thus ensuring that the receiving device is capable of displaying the images at the best quality.

Wasilewski teaches a signal processor (see fig. 16, label 338), but is silent on receiving information from set top terminals at a network controller, transferring instructions from the network controller to the signal processor. In analogous art, Banker teaches receiving information from set top terminals at a network controller (see system manager, fig. 1, label 12, col. 3, ll. 40-45), transferring instructions from the network controller to the signal processor (see sending information to the head end controller 22, col. 3, ll. 40-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wasilewski, Wachob, and Iu by receiving information from set top terminals at a network controller, transferring instructions from the network controller to the signal processor as taught by Banker in order to enable the headend to receive request and process additional services to users.

Regarding claim 71, Wasilewski teaches the demultiplexer separating the multiplexed signals into individual programs (col. 22, ll. 13-23).

Regarding claim 72, Wasilewski receiving a multiplexed signal from a satellite, as shown in figure 17, which as described in relation to the virtual channel maps and selecting the appropriate channels (col. 21, ll. 19-37).

Regarding claim 74, Wasilewski teaches receiving information and one or more multiplexed signals containing a plurality of programs, wherein the information includes

data on identities of desired digital programs (col. 21, ll. 18-36, see also figure 17, col. 22, ll. 14-24). Wasilewski teaches generating instructions regarding the programs, wherein instructions are generated using the received information, in that the VCM interpreter identifies service IDs (col. 21, ll. 18-36), wherein the service Wasilewski teaches the extracting and demultiplexing which selects the programs using the instructions, wherein the selected channel is a subset of the plurality of programs (fig. 16, label 344, col. 22, ll. 13-23). As shown in figure 17, Wasilewski teaches a multiplexer, which equates to a combiner accepting the selected programs and providing a combined signal for transmission according to instructions sent from the CPU to the service demultiplexer to combine the signals (col. 22, ll. 24-27).

Wasilewski teaches controlling a multiplexer, but Wasilewski is silent on the combiner comprising a plurality of first-in first-out (FIFO) storage means for storing packets from a single digital program and outputting the packets to an association output means, a plurality of output means connected to a serializing means.

In analogous art, Wachob teaches run length encoders coupled to FIFO buffers (132), which are for each of the separate television signals and the FIFO is connected to a multiplexer (col. 8, ll. 39-52, fig. 3, labels 132 and 136), which reads on a plurality of first-in first-out (FIFO) storage mean, each FIFO storage means storing packets from a single digital program and outputting the packets to an associated output means. Further, Wachob teaches a plurality of FIFO buffers (fig. 3, label 132, col. 8, ll. 39-52) connected to a serializing means (channel multiplexer, fig. 3, label 136).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wasilewski by implementing a plurality of first-in first-out (FIFO) storage means for storing packets from a single digital program and outputting the packets to an association output means, a plurality of output means connected to a serializing means as taught by Wachob in order to efficiently compress the program signals and provide a plurality of channels on a distinct physical channel, thereby enabling a plurality of programs to be sent on a single physical channel and efficiently using the bandwidth of the channel.

As discussed above, Wasilewski and Wachob teach a FIFO for each channel, wherein a plurality of channels are inserted into the channel multiplexer, but Wasilewski and Wachob are silent on a FIFO control means for monitoring the number of video packets input to and output from the FIFO storages, sending a control signal to a computer processing means when an individual FIFO storage means is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means.

Iu teaches a FIFO queue (34) and a buffer control (38), wherein the buffer control monitors the number of packets input and output from the FIFO storage and sends a control signal to the quantizer (30) when a FIFO is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means (fig. 1, label 34 and 38, col. 4, ll. 53-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the plurality of FIFOs of Wasilewski and Wachob

by implementing a FIFO control means for monitoring the number of video packets input to and output from the FIFO storages, sending a control signal to a computer processing means when an individual FIFO storage means is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means as taught by Iu in order to dynamically changing the resolution quality of the video by monitoring the data rate at the buffers, while ensuring that the signal is output at a constant rate, thereby reducing buffer-overflows and under-runs at the receiver device thus ensuring that the receiving device is capable of displaying the images at the best quality.

Wasilewski teaches a signal processor (see fig. 16, label 338), but is silent on receiving information from set top terminals at a network controller, transferring instructions from the network controller to the signal processor. In analogous art, Banker teaches receiving information from set top terminals at a network controller (see system manager, fig. 1, label 12, col. 3, ll. 40-45), transferring instructions from the network controller to the signal processor (see sending information to the head end controller 22, col. 3, ll. 40-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wasilewski, Wachob, and Iu by receiving information from set top terminals at a network controller, transferring instructions from the network controller to the signal processor as taught by Banker in order to enable the headend to receive request and process additional services to users.

Regarding claim 75, Wasilewski teaches a multiplexer (fig. 17, label 406) for combining the selected signals for distribution to set top terminals (col. 22, ll. 26-32), which equates to a serializer.

Regarding claim 76, Wasilewski teaches selecting using generated instructions from the VCM interpreter (col. 21, ll. 18-37).

Regarding claim 77, Wasilewski teaches receiving information and one or more multiplexed signals containing a plurality of programs, wherein the information includes data on identities of desired digital programs (col. 21, ll. 18-36, see also figure 17, col. 22, ll. 14-24). Wasilewski teaches generating instructions regarding the programs, wherein instructions are generated using the received information, in that the VCM interpreter identifies service IDs (col. 21, ll. 18-36), wherein the service Wasilewski teaches the extracting and demultiplexing which selects the programs using the instructions, wherein the selected channel is a subset of the plurality of programs (fig. 16, label 344, col. 22, ll. 13-23). As shown in figure 17, Wasilewski teaches a multiplexer, which equates to a combiner accepting the selected programs and providing a combined signal for transmission according to instructions sent from the CPU to the service demultiplexer to combine the signals (col. 22, ll. 24-27).

Wasilewski teaches controlling a multiplexer, but Wasilewski is silent on the combiner comprising a plurality of first-in first-out (FIFO) storage means for storing packets from a single digital program and outputting the packets to an association output means, a plurality of output means connected to a serializing means.

In analogous art, Wachob teaches run length encoders coupled to FIFO buffers (132), which are for each of the separate television signals and the FIFO is connected to a multiplexer (col. 8, ll. 39-52, fig. 3, labels 132 and 136), which reads on a plurality of first-in first-out (FIFO) storage mean, each FIFO storage means storing packets from a single digital program and outputting the packets to an associated output means. Further, Wachob teaches a plurality of FIFO buffers (fig. 3, label 132, col. 8, ll. 39-52) connected to a serializing means (channel multiplexer, fig. 3, label 136).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wasilewski by implementing a plurality of first-in first-out (FIFO) storage means for storing packets from a single digital program and outputting the packets to an association output means, a plurality of output means connected to a serializing means as taught by Wachob in order to efficiently compress the program signals and provide a plurality of channels on a distinct physical channel, thereby enabling a plurality of programs to be sent on a single physical channel and efficiently using the bandwidth of the channel.

As discussed above, Wasilewski and Wachob teach a FIFO for each channel, wherein a plurality of channels are inserted into the channel multiplexer, but Wasilewski and Wachob are silent on a FIFO control means for monitoring the number of video packets input to and output from the FIFO storages, sending a control signal to a computer processing means when an individual FIFO storage means is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means.

Iu teaches a FIFO queue (34) and a buffer control (38), wherein the buffer control monitors the number of packets input and output from the FIFO storage and sends a control signal to the quantizer (30) when a FIFO is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means (fig. 1, label 34 and 38, col. 4, ll. 53-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the plurality of FIFOs of Wasilewski and Wachob by implementing a FIFO control means for monitoring the number of video packets input to and output from the FIFO storages, sending a control signal to a computer processing means when an individual FIFO storage means is reaching capacity, and opening and closing the plurality of output means to maintain a constant output of the serializing means as taught by Iu in order to dynamically changing the resolution quality of the video by monitoring the data rate at the buffers, while ensuring that the signal is output at a constant rate, thereby reducing buffer-overflows and under-runs at the receiver device thus ensuring that the receiving device is capable of displaying the images at the best quality.

Wasilewski teaches a signal processor (see fig. 16, label 338), but is silent on receiving information from set top terminals at a network controller, transferring instructions from the network controller to the signal processor. In analogous art, Banker teaches receiving information from set top terminals at a network controller (see system manager, fig. 1, label 12, col. 3, ll. 40-45), transferring instructions from the

network controller to the signal processor (see sending information to the head end controller 22, col. 3, ll. 40-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wasilewski, Wachob, and Iu by receiving information from set top terminals at a network controller, transferring instructions from the network controller to the signal processor as taught by Banker in order to enable the headend to receive request and process additional services to users.

Regarding claim 78, Wasilewski teaches a multiplexer (fig. 17, label 406) for combining the selected signals for distribution to set top terminals (col. 22, ll. 26-32), which equates to a serializer.

Regarding claim 79, Wasilewski teaches selecting using generated instructions from the VCM interpreter (col. 21, ll. 18-37).

5. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,400,401 to Wasilewski et al. (Wasilewski), U.S. Patent 5,231,494 to Wachob, U.S. Patent 5,251,028 to Iu, and U.S. Patent 5,357,276 to Banker et al. (Banker) in view of U.S. Patent 5,099,319 to Esch et al. (Esch).

Regarding claim 49, Wasilewski teaches a inserting one or more local programs and outputting the programs to the combiner, wherein the combiner outputs local programs with the selected programs (col. 22, ll. 27-30). Wasilewski inserts local programs but is silent on receiving one or more local programs. Esch teaches receiving local content for insertion for distribution over a cable network (fig. 1, 5, col. 2, ll. 12-20,

col. 3, ll. 20-36, col. 7, ll. 18-28), which reads on local programs. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wasilewski by receiving one or more local programs as taught by Esch in order to provide programming targeted to a regional area thereby enhancing and targeting information to regional viewers.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Y. Koenig whose telephone number is (571) 272-7296. The examiner can normally be reached on M-Fr (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571)272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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